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AN INTRODUCTION TO THE ARABIC LITERATURE OF THE JEWS.

II (*continued*).

35. *Jewish Physicians.*

THE exclusion of Jewish physicians from practice by religious principles, and not by national antipathy, is, as far as I know, nowhere mentioned regarding Mohammedans; indeed, such accusations as that of poisoning wells by the Jews and such like, were never advanced in Mohammedan countries. If, according to some chronicles (Weil, *Khalifen*, II, 375) the Christian physician Ismail Teifuri poisoned the Khalif Al-Man^tsur (862), it was, naturally only done by the incitement of an Islamitic party. In Djaubari's compilation of all deceits committed by Christians and Jews we find nothing of the kind; he only accuses them of charlatancy and covetousness. A Mohammedan science of medicine, like the Christian by Ringseis in Munich, who orders an Ave Maria at once with a *lavage*, does not exist. Islam is known as not favouring medicine, because of its fatalism. The supposed origin of medicine by Hermes, the Arabic Idris, &c., which we find in learned books¹, is certainly borrowed from Christian sources, and perhaps as an argument against the application of foreign medicine. On the other side, Mohammed himself has been considered as a physician, and there is a set of books, called *Medicine of the Prophet* or *Prophetical Medicine*, one of which has been edited by Perron. The

¹ See the extracts of ibn abi O'seibia by Sanguinetti in the *Journ. Asiat.*, 1854.

more the Christian and Jewish physicians were in request, it was but personal rivalry that opposed them, and opponents took advantage of the slights which were put upon the Jews in general, to prejudice the position of some of them. The often-quoted covetousness of the physicians found here full play through the known liberality of the Oriental despots to their favourites, and in some cases to the savers of their life, as, for instance, the Christian ibn Bakht Jeschu, of whose riches ibn abi O'seibia gives interesting details (*Journal Asiat.*, 1854). The training of the physicians was already in early times effected by public readings and *nosocomia*. Hence we find Jews as pupils and teachers in public institutions and lectures. Certainly it was but an exception caused by personal fanaticism, when Jews and Christians were not admitted to lectures, as, for instance, in the middle of the twelfth century. Al-Ra'habi, in Damascus, on principle admitted only Moslems to his lectures (and of the latter only those who devoted themselves entirely to medicine). He asserts that he did not instruct non-Moslems, with the exception of two, the Jew 'IMRAN and the Samaritan Ibrahim ben Khalaf, and these two only after they had made all efforts possible, and had produced recommendations of all kinds. The Jew became the teacher of ibn abi O'seibia¹. A pupil of Sa'id ben Hibat Allah, the Jew abu 'l-Barakat HIBAT ALLAH, was admitted to the lectures of his master, but only to the floor, and only through bribery, and because he answered a question of the professor by a quotation from Galen. The same Abu 'l-Barakat served also in the army, became physician-in-ordinary to the Khalif (1160-70), and was also consulted by the sultan of the Seldjuks. But all this did not protect him from general mockery and contempt; and when a kadi, in the presence of the sultan,

¹ Geiger, *J. Zeitschr.*, IX, 174; *ZDMG.*, XXV, 502, where I have suggested his identity with Moses ben Zedaka, celebrated by songs of Charisi and the Karaite Moses Dar'i whom Pinsker imagined to have been the prototype of Gabirol and others.

did not rise before him, he adopted Islamism, but on condition that his daughters inherited his fortune (against the Mohammedan law)¹. After his conversion he scoffed at the Jews himself, and became the object of the satire of the Christian physician ibn al-Talmids, and was put to the blush even in public. He died, eighty years old, blind and deaf, in consequence of an unfortunate treatment of elephantiasis. Of one of his works called *المعتبر* (the Meditator), upon logic, he was so proud that he ordered it to be mentioned in his epitaph. This book, mentioned by the bibliographers, and quoted by authors, exists still in Oxford and in the library of the Khedive (comp. my *Alfarabi*, p. 10). His commentary on Kohelet, composed 1143, exists in Hebrew characters, which shows that he wrote it while still a Jew. A fragment of it is cited in Pococke's *Porta Moses*, pp. 189, 190. The Oxford MS. contains a Hebrew eulogy of the author (called "Natanel"), and his work by Isak ben Abraham ibn Ezra, evidently the son of the celebrated Abraham, who followed Hibat Allah to Islam. This eulogium (which I had copied long before in Oxford) was published by Dukes in the journal *בוכבי יצחק*, with remarkable blunders, which are corrected in the *Hebr. Bibliogr.*, 1858 (I, 92; II, 109; comp. III, 32, and Geiger in *ZDMG.*, 1859, p. 511). Grätz, VI, 453 (comp. p. 303), used these remarks, as if they were given by Dukes, in order to prove that Ibn Ezra was already before 1140 (!) in Bagdad, which he, indeed, never saw.

Having spoken here of some *apostates*, the question might be raised how far *converted* Jews are still to be treated in Jewish literature. We do not meet among the Arabs the speciality of converted *secret* Jews, in Spain called *Maranni* (אנוסים), yet there is once to be found a similar case during the period of the Almohades, who forced their religion upon the inhabitants of the conquered countries in Spain and Africa, about the middle of the

¹ On this law comp. Munk, *Notice sur Josef ben Jehuda*, p. 17.

twelfth century¹, where even the family of Maimonides was declared to be outlawed. Grätz (vol. VI) considers the doubt of Maimonides' conversion as "critical idiotey," which designation, indeed, unconsciously hits Rapoport and Frankel, who in his journal (1846, p. 405) cannot abstain from complaining of the "inclination to give more credit to dead codices and dubious reports than to the living and clear spirit," &c. But without these abnormal conditions many of the Jewish scholars and authors have adopted Islamism, for which the motives do not always appear, and, indeed, we generally owe the notice of their having been formerly Jews only to the Moslem biographers and historians, who, according to their custom, join to the name the gentilicium Jew (§ 16), and who found the motive of the conversion in spiritual illumination and religious persuasion.

Our general question, however, is not to be answered in general, but only after an investigation of the details, viz. how far the converted Jews were educated in Jewish culture, and were closely connected with it. But as long as there is very little known of the lives of a great part of these converts, we cannot exclude them from our consideration.

Let us return to the physicians. As early as the ninth century some Jews in Asia and Africa were distinguished by their high position. Among these is most celebrated the "Israelita," *κατ' ἐξοχήν*, in Arabic "al-Israili," with the whole name abu Ja'akub Is'hak ben Suleiman², who at first was an oculist in Egypt, where ophthalmics are at home. He lived in stirring times. The second half of the tenth century is the turning-point of the Khalifat. With the regiment of the life-guards under the so-called

¹ Saadia ibn Danan, ed. by Edelmann, *Chemda Genusa*, p. 16.

² In Latin sources "*filius adoptivus (regis Arabum) Soleiman*"; the words in italics are successive interpolations (*Hebr. Übersetz.*, p. 755). D. Cazés (*Essai sur l'histoire des Israélites de Tunisie*, Paris, 1889) in ch. v (p. 56, *Les Israélites à Kairouan*), principally extracted from Grätz, amongst other errors, discerns two Isaks, the physicians of Al-Man'sur and of Zijadat Allah!

"sultan" was connected the independence of the remotest provinces in east and west. The propagation of sects like the Karmaths, &c., was in connexion with the difference between the Schiites or Alides, and hence originated the creed of a *Mahdi* (the Arabic Messias), Obeid Allah was proclaimed as such at the end of the ninth century in the Berbery, at Kairuwan, and finally in Egypt; that caused the ruin of the Tulunides in Egypt, the foundation of the dynasty of the Fatimides, and put an end to the dynasty of the Aglabites who resided in the territory between Egypt and the western Berbery at Kairuwan near the ancient Cyrene.

We owe the most important information concerning the life of Isak Israïli to his pupil, a celebrated physician of Kairuwan, abu Djaafar Ahmed ben Ibrahim ibn al-Djezzar (died 1004, more than eighty years old), who has recently become better known by articles of Dugat, Daremberg, and Steinschneider (see the quotations in *Hebr. Übersetz.*, p. 702). Ahmed composed a history on the appearance of the Mahdi which probably was a source of ibn abi O'seibia. Amongst the other sources about Isak, collected elsewhere (*Hebr. Übersetz.*, p. 755), we find 'Sâ'id ibn 'Sâ'id (who has become "Sanech" in Grätz, V, 282), whose work is quoted by Abraham ibn Chisdai in the preface of his translation of Isak's book of the elements¹. Carmoly and Grätz borrowed their notes, with more or less ability, only from Wüstenfeld. Israïli relates that he met Zijadat Allah and his army at Larissa (al-Arisch). I cannot, however, find in Weil's *Khalifen* (II, 575) the exact time when Zijadat happened to be there. The date 904 of Isak's calling to Kairuwan, ap. Grätz, is a purely arbitrary statement. The anecdote of a sophistical contention with ibn Hobeish al-Junani leads Grätz to make the assertion that ibn Hobeish was engaged for that purpose. It is, however, possible that the latter is identical with the general Ibrahim ibn Hobeish-Isak who settled at Kairuwan,

¹ See the article appended to my essay on Alfarabi (1869).

and was there instructed by Is'hak ben 'Imran (*vulgo* 'Amran) of Bagdad, a celebrated physician who got the by-name Summ Sâ'a (shelter of the time), and who transplanted philosophical and medical science to Kairuwan, and, according to ibn abi O'seibia, was denounced to Zijadat Allah by a Jewish physician of Spain, and cruelly executed. The ill-famed Leo Africanus (ed. Fabricius, p. 294) makes "Isak ibn Amran" a Jew, and his rival a Christian, who died anno 183 (799!)¹. Carmoly (*Histoire*, p. 19), not content with this error, quotes ibn abi O'seibia, XIII, 2, where, however, is the article on Israeli whom Carmoly makes a pupil of a grandson of Isak ben Amran, who is said to have also written the *Lettres Médicales au Prince Said ben Naufil*. This Said was a Christian physician who gave Wüstenfeld (n. 74) occasion to show by his being contemporary with Is'hak ibn 'Amran that the latter must have lived under the last Zijadat. But even that is not enough. Carmoly knows another Isak Bagdadi in the eleventh century².

In 908 Zijadat Allah succumbed to Obeid Allah, and Isra'ili passed over to the service of the conqueror. As to the pretence of Obeid Allah's having been the son of a Jew (Cassel, p. 201, n. 73, Grätz, p. 282), there is no historical support of it, as has been already remarked by Sylv. de Sacy and Weil (*Khal.*, II, 602). Isra'ili died childless, probably not before 950 (at the earliest 940); the accurate definition of his time and of his authorship of an Arabic commentary on the book Jezirah is the subject of a large inquiry (*Hebr. Übersetz.*, p. 394). Grätz follows Maimonides when refusing to Isra'ili all philosophical depth, but I very much doubt whether Grätz himself had ever read attentively any of the rare philosophical works of Isra'ili.

Soon after Isak there flourished in Spain abu Jusuf

¹ Jost, *Gesch.*, VIII, 1, quotes De Sacy, *Relation de l'Égypte* (viz. the notes to Abdallatif), pp. 42-44.

² *Catal. Bodl.*, p. 1115 and addenda; *Virchow's Archiv*, LII, 471.

Chisdai ben Is'hak ibn Baschrut or Schaprut, who addressed an epistle to the King of the Chazars (who had become a Jew). Chisdai has been the subject of a monograph by Philosseno Luzzatto (1852)¹. I have not the intention of speaking here of his diplomatic position and activity at the court of Abd al-Ra'hman III, of Cordova. Carmoly makes him prime minister (but see Luzzatto, p. 55), whereas Munk does not even consider him a real vezir. I wish to take into consideration especially his part in the Arabic translation of Dioskorides. The physician ibn Djoldjol (ap. De Sacy, note to Abd al-Latif, and Wenrich, *De Auctoribus Graec.*, pp. 217-18, Gayangos, *History of the Arabs in Spain*, App., p. xxv) relates that in the year 948-9 the monk Nikolaus was sent by the Emperor Romanos to Abd al-Ra'hman with the intention of interpreting the terms occurring in Dioskorides. This monk was a personal friend of Chisdai, and the latter endeavoured also to be useful in this affair. In that report occur the words من جهة التقرير ("about the favour" of Abd al-Rahman); De Sacy explains the phrase, "to obtain" the favour of Abd al-Rahman; Gayangos refers it to the favour he had already got (Grätz supposes two readings of the text); Carmoly (in two notices of his *Revue Or.*, 1841) quotes De Sacy, and in the interpretation of the Arabic phrase follows Gayangos, which has already been discussed by Cohn (*Literaturblatt*, II, 649). Luzzatto follows De Sacy; Grätz, however, adopts the explanation of Gayangos, but refers the phrase itself to the first rising of Chisdai. More important, for the history of the science, is the question regarding the translation of Dioskorides itself. Grätz (V, 363, 539) speaks of a Latin translation, of which no mention whatever is made in the sources². Hammer (V, 347) represents the affair in another way, which it is not our business to inquire into. In *Haji*

¹ Grätz, V, 539, removes the beginning and the end of Chisdai's office to an earlier period.

² L. Leclerc, in his "Étude hist. et philolog. sur Ebn Beithar" (*Journ. Asiat.*, 1861, XIX, 440), on Nicolaus, does not mention Chisdai at all.

Khalfa (V, 85) the name of Chisdai is omitted, and in *Nicoll's Cat.*, p. 581, Nikolaus has become دياقوس, and Stephan ben Basil "ben Masail" (also in Hammer, III, 344)¹.

The posterity of Chisdai remained a family of scholars and physicians, but must probably be distinguished from the family of Chisdai Levi, to which perhaps a grammarian, abu 'l-Walid Jona ben Chisdai, belongs, perhaps also the family of Abraham ibn Chisdai ha-Levi.

In the eleventh century there lived abu Omar Jusuf ben Chisdai, a Hebrew poet; his son, abu 'l-Fadhl Chisdai (1066 still young), embraced the Islam religion. Hammer (V, 340) confounded him with Chisdai ben Ishak (see above), which has been rectified by A. Levy (*Allgemeine Zeit. d. Judenth.*, 1855, p. 137). The religion of abu Djaafar Jusuf ben Ahmed (the latter name is a synonym of Mohammed), and the circumstances in which he lived, are uncertain; he was a friend of the Spanish philosopher, abu Bekr ibn Badja (or al-Saig), and in literary intercourse with him. The farewell letter of ibn Badja, still existing in the Arabic original, a Hebrew translation of which has lately been published by Dr. M. Schreiner, is not addressed to ibn Chisdai. Abu Djaafar moved to Egypt, where he became celebrated, and was closely connected with Maamun ben Nur al-Daula (crucified 1128), by whose order he composed the commentary on the oath of Hippokrates, and wrote some other commentaries upon Hippokrates and Galen².

Before we return with ibn Chisdai to Egypt, we must mention an Arabic medical work composed in Spain for the Christian prince Fernando, son of Sanchez (1295); the author cures with cold water. I conjectured (*Jewish Liter.*,

¹ Stephan lived a century before that time; see my *Alfarabi*, p. 251; *Virchow's Archiv*, LII, 354.

² On all this see the article on Josef ben Chisdai in Ersch and Gruber, sect. II, vol. XXXI, p. 73; *Catal. Bodl.*, pp. 841, 1450, and against Geiger, *J. Zeitschr.*, I, 238, V, 142, see *Hebr. Bibliogr.*, IX, 170.

§ 22) that the anonymous writer was Samuel "aben Hucar" (ibn Wakkar), about 1311. Casiri extracted only a few words from the MS. ("and what we, the congregation of the Jews, believe about that"). This book is the first *medicina patria* since Hippokrates, according to Pizzi (ap. Morejon, I, 87; cf. *Virchow's Archiv*, 37, p. 377).

In Egypt the first Fatimides were more tolerant than their followers. Al-Aziz made a Jew, whose name probably was Manasse, his vezir at Damascus¹, his proper vezir was abu 'l-Faradj Ja'kub ben Jusuf ben Ibrahim ben Harun ben Daud ben Killis (?), or Kils (died 990), who came, still a Jew, with his father about 331 H. (942-943) from Bagdad, and according to some authors, died in his original religion; but ibn Khallikan contradicts this. He is said to have been a descendant of Ahron (a Kohen? is the name کلس a corruption of کهن?), or of Samuel ibn Adijja; he adopted the faith of Islam in 966, was highly esteemed by Kafur al-Ikschidi, and in 978 obtained the position of vezir. He composed a work on Jurisprudence².

We have already spoken of the bloodthirsty 'Hakim (above, § 24). Under the last Fatimides, especially under the Ajjubites, to whom Saladin (1171) belonged, the religious tolerance became greater. In Egypt, especially in Cairo, there were probably some Karaïtes already in the time of Saadia (beginning of the tenth century); in later times this town was one of their chief residences; but in

¹ میشا, ap. De Sacy, *Mém. sur les Druses*, I, p. ecciii; comp. S. Cassel, art. *Juden*, p. 201: "Mescha"; *Hebr. Bibliogr.*, VIII, 146; comp. Bacher in Kobak's *Jeschurun*, VIII, 22 (the old Manasse). In general Aziz appointed Jews and Christians to high posts, but did not hesitate to sacrifice them to the mob's rage, who made his tolerance the subject of a reproach (*Revue des Ét. Juives*, XXVIII, 93).

² The principal source is ibn Khallikan, whose English translation (by M. G. de Slane) not having been published as far as IV, 359, I gave (*Hebr. Bibliogr.*, VIII, 118, 140) the German incorrect article of Hammer (V, 124) with some corrections. Hammer makes Jakob a teacher of mathematics (see *Bibliotheca Mathem.*, 1895, p. 28, n. 26). Jakob is mentioned by his contemporary Isak Israïli (*Hebr. Übersetz.*, p. 391).

the year 1841, according to the report of Munk (*Israel. Annalen*, III, 84), they numbered only about a hundred persons. Munk accounts for this decrease by the circumstance of their passing over to Rabbanism or Islam. As to the Rabbanism, we have a credible report of a great conversion effected by the Nagid Abraham (Maimonides) in 1133, who consequently is the great-grandson of Maimonides, not his son¹. But, as it seems, already before this conversion, an approaching of the Karaïtes to the Rabbanites took place. As to the embracing the faith of Islam, we have a trustworthy statement of Samuel ibn Abbas (Schreiner in *Monatsschrift*, 1898), who maintains that, far from the absurdities of the Rabbanites, they were more susceptible of the truth of Islamism.

At all events there existed in the twelfth and thirteenth centuries, and probably as early as the eleventh, many distinguished physicians of Jewish creed and in high positions, a part of whom were Karaïtes, but the chief sources do not furnish sufficient information. The biographical *Ta'arikh al-'Hukamâ*, of al-Kifti, of which a compendium, made by Zuzeni, has been extracted by Casiri, is not yet published; the promised edition of August Müller is going to be published by Mr. J. Lippert, in Berlin. The *History of Physicians*, by ibn abi O'seibia (in the middle of the thirteenth century), edited by Aug. Müller, 1884, does not always indicate, by the word "Kara," that the physician in question was a Karaïte. Wüstenfeld, in his *History of the Arabic Physicians* (1840), had only an imperfect copy of ibn abi O'seibia (see his table, p. 133)²; Hammer, in his

¹ Pharchi (or Parchi), *Kaṣṣor*, ch. 5, f. 20 (13 ed. Berlin, comp. Edelm., p. xl); Geiger, II, 515; Conforte, f. 23 (the source of Edelm.); comp. Geiger, *Melo Chofnajim*, p. 79; Rapoport, in the *Gutachten über die Beschneidung*, p. 125. This is of importance for the position of Maimonides with respect to the Karaïtes. See also הרמיר, 1861, p. 342, about the Karaït. *Siddur*; see also below.

² I have published some articles of ibn abi O'seibia out of the Berlin and Munich MSS. in *ZDMG.* and *Hebr. Bibliogr.*; a list of these articles is given in my review of Müller's full edition in Kuhn's *Litbl. für Orient. Philologie*,

History of the Arabic Literature, has supplied the articles wanting in Wüstenfeld, but very carelessly; even pretending sometimes that his article is missing in Wüstenfeld, when he was not able to find its place. Al-Safadi, who wrote a compilation of biographies of blind men, extracted from O'seibia, mentions Muwaffak ben Scha'ja, the player on the cither, who was blinded by an arrowshot (*ZDMG.*, XXV, 503)¹. Musa ben العيذار (Elieser?) in Egypt, was a physician in ordinary to Muizz (who died Dec., 975; Hammer, V, 357; Leclerc, I, 403; *Hebr. Bibliogr.*, V, 51; Geiger, *J. Z.*, I, 241).

At the end of the eleventh and the beginning of the twelfth centuries Abu Kathir Efra'im² ben al-Zafan (الزفان or الزافان, probably not אלצפן, see § 20), in the service of the governors of his time as physician, was the best pupil of Ali ibn Ridhwan (ob. 1068), whose writings were spread amongst Jews, and who had many pupils, like Fakhr al-Din al-Razi, &c. (Wüstenf., § 81). Efra'im was a great bibliophile, had many books copied, and bought many of them, so that ibn abi O'seibia saw his name on many books, of which he is said to have left not less than 21,000 volumes. O'seibia narrates that a bookseller in Dijar Mi'sr bought 10,000 volumes from Efra'im, but al-Afdhal, the son of the Emir al-Djauseh, not liking the books to be brought out of the country, himself paid the price of the books to Efra'im. The latter composed different writings. His pupil, abu 'l-Kheir Salama ben Mubarak ben Ra'hmun, known as a medical author, was also a pupil of Mubaschschir ben Fatik, a philosopher and moralist (*Journal Asiat.*, 1856, vol. VIII, p. 177). The son of Salama b. Mubarak was also a physician.

vol. II, 1881, p. 400. Loeb's register of Jewish physicians mentioned by Leclerc (and Carmoly) in the *Magazin f. die Wiss. des Jud.*, XVII, 1880, p. 101 ff., is only compiled from the registers.

¹ Safady owes some of his statements to his Jewish contemporary, the physician Sadid al-Din, see p. 106.

² The form *Efranin* in Arabic is nothing but a graphic error, corrected in Müller's edition of ibn abi O'seibia.—Hammer, VI, 486 = VII, 504.

In the year 1134-35 'Hafidh had a physician-in-ordinary whom Grätz (VI, 165) would identify with abu Man'sur Samuel ben Chananja the Nagid, whom we have spoken of above (§ 20), under the name כנצור, n. 355. About that time there lived abu 'l-Fadhail ibn al-Nakid, professor of medicine at Cairo, of whom Wüstenfeld does not say that he was a Jew. He is said to have been in correspondence with Maimonides about some mysteries (probably an invention), and, according to Carmoly, Maimonides sent his son to abu 'l-Fadhail in Spain (*Catal.*, p. 1933). A pupil of abu 'l-Fadhail was the Karaïte abu 'l-Fadhl Da'ud ben Soleiman, &c. (born 1161), teacher at the Nosocomium Na'siri, a friend and colleague of ibn abi O'seibia and physician-in-ordinary to Malik al-Adil, likewise author of different writings, especially of a standard work, *al-Dastur*, on compound medicaments. He seems to have been a son of abu 'l-Bajan ben al-Mudawwar, called al-Sadid, under the last Fatimides, and under Saladin, from whom he got a pension for about twenty years, until he died, eighty-three years old, 580 H (1184)¹.

This position had an influence on the rank of these physicians among their people, especially if they were at the same time scholars in Jewish sciences, which was mostly the case. So we see about 1170 Natanel, perhaps the father of Jakob ben Natanel al-Fajjumi (see above, § 20, p. 522, n. 154), in the rank of "Head of the Jeshiba," with the title of "Prince of Princes," identical with HIBAT ALLAH IBN DJAMI ben Zein ben Hasan ben Efraim ben Isak, at Fostat (according to Hammer, an offspring of the above-mentioned Efra'im, but the latter called himself ben al-Hasan ben Ishak). Hibat Allah was a pupil of the renowned physician al-'Einzarbi (ob. 1153), in the service of Saladin, and much respected; he was also the teacher of the Karaïte, ABU 'L-FADHL DA'UD. He endeavoured to speak pure Arabic, and for that purpose he always had

¹ Munk, *Isr. Annalen*, I. c., hence Carmoly, *Hist.*, p. 86; Hammer, VI, 482, *Elia*; VII, 520, *Medur*; see Kobak's *Jeschurun*, V, 186.

at hand a copy of Djaubari's lexicon. His writings were partly edited by his son Ismail, and are therefore sometimes attributed to the latter. Among these works we point to the *Kitab al-Irschad*, which Mollah Ja'hja designates as one of the best, and of which, in the Bodleian Library there are no less than four MSS. He also wrote a work on the nature of Alexandria, its climatic peculiarities, &c. There are in the Vatican three MSS. of a similar work, two anonymous (267, 1, 2 ; 315, 6), and one (145, 18) attributed to the Jew Jakob ben Ishak in the twelfth century (?), and, according to a communication of Prof. Guidi (*ZDMG.*, XXXI, 760, comp. *Hebr. Bibliogr.*, XV, 131), this fragment of eight pages is distinctly attributed to Jakob ben Ishak. If ibn abi O'seibia does not confound this Hibat Allah with the above-mentioned apostate, he also has been the subject of a satire by an Arabic author, which has been answered by a panegyric by another Muslim. I have long ago suggested that Maimonides filled the rank of Natanel, after having been subordinate to him in ritual affairs (comp. *Hamagid*, 1861, p. 23, extract of *Kitab al-Kafâja*). MAIMONIDES was, probably as early as 1167, a man of such authority as to sign a circular, at the head of a college of ten persons, which is directed against heretic usages (כנהני מנינות). The arguments raised by Grätz (VI, 336) against the date of that document, are characteristic (see *Hebr. Bibliogr.*, V, 30, VIII, 81). That Maimonides removed the Karaïtes from the royal courts, we learn directly from Nachmanides (*Epist.*, fol. 86, ed. Basel, ap. Grätz, p. 359). Maimonides' position and authority as a physician is sufficiently known, but we still meet with the error, even by erudite authors, that he was physician-in-ordinary to Saladin himself¹; he might have been the true person who induced Lessing to place his Nathan (Mendelssohn) at the court of Sultan Saladin! Abd al-Latif names Maimonides under the three

¹ This error was perhaps strengthened by the expression "ad Soldanum regem" in the Latin translation of his medical essay (see below); one might have confused Soldan (Sultan) with Saladin?

persons on account of whom he visited Egypt. We have a consultation of his required by al-Malik al-Mutsaffir, regent of Hamat, nephew of Saladin. He served also the successors of Saladin, and was consulted at Askalon by the Christian king (Grätz, p. 358, thinks of Richard Lion-heart), who proposed to him to enter his service as physician-in-ordinary, but Maimonides refused this honour. Some Mohammedan authors praise Maimonides. A pupil of his was the father of ibn abi O'seibia (Munk, *Notice sur Joseph ben Jehuda*). Al-Kifti alone asserts that he had but "little" practice as physician¹, but Dernburg (Geiger, *J. Zeitschrift*, 1835) points to Maimonides' own description of his activity. Grätz gives his opinion that he was more a medical man of theory than of practice. But here a distinction is to be made between the time before 1190 and afterwards (*Catal. Bodl.*, p. 1867). Some of Maimonides' medical works are printed in Latin translations, the best known of them are the *Aphorisms*, which are considered as equal to those of Hippokrates. The old edition of the Latin translation is better than the printed Hebrew one. We find there a remarkable passage against Galen (cf. *Virchow's Archiv*, vol. LII, 356). His treatise called *al-Fudhiliyya*, composed 1198, at the request of the vezir al-Fadhl, treats of poisons and their remedies. It is printed in a French translation by Rabbinowitz, and in a German extract by Steinschneider. Some other treatises are as yet unedited.

The pupil of Maimonides, JOSEF IBN AKNIN, too, was a physician, and in a high position; he was a friend of the vezir al-Kifti. He wrote a work on the composition of medicaments (not "nourishments," as Hammer says) and a commentary on Galen's *Commentary on the Aphorisms of Hippocrates*, still existent.

We find also an apothecary, probably a Karaïte, ABU 'L-

¹ Casiri translates قلة by *nulla*! Grätz, VI, 356, pretends that Maimonides did not venture to cure the patients alone!

MUNA BEN ABI NASR IBN ATHAR (1259-60)¹, whose book of antidotes, *Minhadj al-Dukan* (printed at Cairo, 1870), was much in favour as a classical work. There are many MSS. of it, even in Karschuni (in the British Museum), and in Hebrew characters (in my own possession); it exists also in Arabic characters in many libraries at Constantinople, catalogues of which are printed in the seventh volume of *Haji Kh.* (*Hebr. Bibliogr.*, VIII, 139, Kobak's *Jeschurun*, V, 186).

Sadid (al-Din), of Damietta, who died at Cairo in 1342, was in the service of al-Malik ben Na'sr, according to his contemporary Safadi (*Journ. Asiat.*, 1857, IX, 410), who owes to him many a communication in his biographical work (*Hebr. Bibliogr.*, XII, 129).

36. *Mathematicians.*

Next to medicine there was another science that offered a neutral ground to the different religious parties, viz. mathematics. I may here refer the reader in general to my essay, "Mathematik bei den Juden," continued in the *Bibliotheca Mathematica* (by Eneström, since 1893). Pure mathematics are here less taken into consideration, because they gave less occasion to official relations. They too, but only later, made some progress with the Arabs, and after them through some Jews and Christians, for instance, Sava-sorda, who is none other than Abraham bar Chijja (about 1130), who wrote in the Hebrew language. To the Jewish scholars who composed mathematical works belong, for instance, BISCHR BEN PINCHAS IBN SCHUEIB (about 997), who probably carried on a controversy with ibn Zar'a; abu Sahl DUNASCH BEN TAMIM, who wrote on the calculation called "Dust calculation" (*Hisab al-Gobar*), a remarkable thing for the tenth century², and composed a work on

¹ Carmoly alone knows that he was a Samaritan; his source is a MS. which never existed, as we now know.

² Reinaud, *Mém. sur l'Inde*, Woepeke, &c., quoted in *Hebr. Übersetz.*, p. 397.

astronomy by order of the governor Ismail ben Kaim; also SAMUEL IBN ABBAS, the convert (twelfth century), wrote on pure mathematics. A work of his was attributed, in a Bodleian MS., to a fictitious "Alman'suri" (*Zeitschr. f. Mathem.*, XII, 30, n. 51).

It was different with applied mathematics, especially the science of astronomy, with her false sister astrology. The latter ruled the Middle Ages in all religions. Even ingenious and rationalistic scholars, like Abraham ibn Ezra and Levi ben Abraham, attributed to her a high authority. The first explained some obscure passages in the Pentateuch by astrological notions¹. The חכמי הכבי והחשיה mentioned by him, are astronomers and astrologers. High personages had their court-astrologers, as the Babylonians had their Chaldeans, and the Egyptians their "Chartummim"; the oriental court-sages resemble in some way the German princes' jesters ("Narren"); but the latter had the privilege to tell their lords the *truth*, the former to tell them *lies*. Though we reject the matter of astrology, it is closely connected with astronomy, and we must suppose that the astrologers were also great astronomers, or that they, at least in some degree, possessed some exact science. The oldest known Jewish astrologer is MASHALLAH of Egypt (called a sage of חורי by ibn Ezra), in the time of the Khalif al-Man'sur, or al-Ma'amun (770-813), whose name has undergone various corruptions in the translations, for instance, Mesehala and Masahallac, &c. One of his works, edited in a Latin translation, is probably more correctly attributed to Sahl; two others are perhaps translated into Hebrew by ibn Ezra; we learn that he believed that the stars receive their light from the sun². We do not know the time of

¹ Rosin collects such passages in his essay on the theology of ibn Ezra (*Monatsschr. für Gesch. u. Wiss. d. Jud.*, 1898); but it is curious that he tries to construct the astrology of ibn Ezra out of occasional passages, neglecting entirely the monographs existing even in a printed Latin translation; see my catalogue of the Hebrew MSS. of Berlin, Abth. 2, pp. 136-50.

² This opinion was adopted by other astronomers; see my article:

ANDRUZAGAR ben Zadi Farukh, perhaps a Persian, whom ibn Ezra denotes as the greatest Jewish astrologer (*Hebr. Übersetz.*, 531, 854, n. 54^b, where read: *Monatsschr.*, 1884).

The works of the Jews have not only a literary and historical interest, they are also of value for the science itself, especially if they contain exact observations, because these alone are the basis of all theories on the motion of the stars. So, for instance, Copernicus mentions the observations of the Arabic Spaniard al-Zarkali, or Zarkala, which are also translated by Jews; and in the new edition of the *Biographie Universelle* Zarkali himself figures as a Jew. Copernicus mentions also the Jew "Prophatius" of Marseilles, who is no other than Jakob ben Machir. The Jews were not only pupils of the Arabs, but observed the stars also independently. The Arabs followed the classical writings of the Greeks, especially the *Almagest* (Arabic title of the "Great Syntaxis" of Ptolemy). With the Greek science they combined the Indian. A Jew was employed as interpreter at the translation of an Indian work into Arabic¹.

An astrologer probably of importance was SAHL, called "Rabban al-Tabari" (the Rabbi of Tabaristan), about 800, a scholar in physics, mathematics, and astronomy. He translated scientific works "from one language into another." His recension of the *Almagest* had a passage about "radiation" in the astrological sense, not that he discovered the reflection of light, which is a ridiculous interpretation of that termination repeated by Schleiden.

Aven Natan e le teorie ecc. della luce lunare e delle stelle (estr. del *Bullettino ecc.*), Roma, 1868. (Aven Natan is in reality ibn Heitham.)—On Mashallah see *Hebr. Übersetz.*, p. 599, on his name, above, § 20, n. 389.

¹ By a mistake of De Rossi he has been called Jakob ibn Schara, rather ibn Tarik, name of the Arabic translator.—In the enumeration of Jewish scholars, "which the history of Arabic culture has recorded," ap. Grätz, V, 224 (in reality borrowed from my article *Jüdische Literatur*, § 21 [see *Jew. Lit.*, p. 258, n. 60, *Hebr. Bibliogr.*, V, 31 and 148], and the enumeration of Schmiedl, *Ben Chananja*, 1862, p. 135), the Fihrist is quoted, who only mentions Mashallah; De Rossi does not give "Al-Battani" (an erroneous conjecture of mine), and Mashallah is no doubt a Jew.

His son Ali (see below) declares that he preferred the study of medicine as a heirloom from his father, without caring for praise or money. I am inclined to believe that this Sahl is identical with SAHL BEN BISCHR, whom Casiri has made, without any reason, a Spaniard, and whose works are translated into Latin under the corrupted name Zael (Zehel, Zebel, Bebriz, &c.) "Ismaelita." His slave KHURZAD(?) was also an astrologer. The son of Sahl, called abu-'l-Hasan (not "abu Sahal," as Grätz has it) Ali, was secretary to the prince Maziar ben Karin (about 225 H.); he confessed the Islam before the Khalif Mu'ata'sim himself, entered his service, and became afterwards the first officer of Mutawakkil. He was the teacher of several renowned Arabian physicians, for instance, of the celebrated Razi and 'Einzarbi. He composed, perhaps before his apostasy, many medical works, among them an encyclopaedia, entitled the *Paradise of Science*, &c. (in the third year of Mutawakkil), of which MSS. are preserved in the British Museum, and in Berlin. The possessor of the former MS. is called Josef, son of the "Ras al-Djalut," so that we owe the preservation of at least one MS. of this old work to a Jew. Its interest surpasses the science of medicine¹.

A contemporary of Sahl was abu 'l-Tajjib SIND BEN ALI, an excellent astronomer, author of an essay on an astronomical instrument invented by him, of a work on astronomy, and such like. He was in the service of the Khalif Ma'amun, who caused him to embrace Islam, and whose death prevented him probably from writing down or finishing his observations in his chief work, the tables of Ma'amun, called "the proved" (*al-mumta'hana*), which were still in use at the time of al-Kifti (the Latin translation of Casiri, I, 440 is incorrect). He had built a Synagogue in the residence town of the Khalif (*Bibliotheca Mathem.*, 1894, p. 99).

¹ M. Schreiner has extracted a passage from the introduction in the *Monatsschrift*, 1899, p. 462.

Another renowned astronomer was IBN SIMUJE (or Sima-wei, tenth century?). A fragment of the treatise, "De Eris," composed 1191, probably in the Arabic language, was printed in a Latin translation (*Catal. Bodl.*, p. 652, n. 412).

In Spain, too, in early times, the Jews devoted themselves to astronomy, for instance, Mar HASAN ibn Hasan (971), whom Geiger identifies with JEKUTIEL ibn Hasan, and whom Gabirol deplored (1040). This Hasan composed three works upon the Jewish calendar, and according to Slonimski, he first introduced the quarter-day of R. Adda, but Pineles contested it¹. Soon afterwards ISAK BEN BARUCH al-Balia (of Kalaja) of Cordova (1035-94) taught mathematics at Granada; according to the direct testimony of Moses ibn Ezra, he was astronomer to the Mohammedan princes. His work on Jewish calendars (*Catal. Bodl.*, p. 2171) was probably also composed in the Arabic language, and different from his commentary on the Talmudical tractat *Rosh ha-Shana*. About the same time the Mohammedan judge, 'Sâ'id ibn 'Sâ'id (about 1070), assembled several learned men, and among them twelve Jews, to compile the celebrated Toledan tables, which made use also of the Jewish literature, and which were founded on the cycle of Meton (*Jew. Lit.*, p. 355, n. 29; comp. 188). The same 'Sâ'id composed a work on literary history, quoted by Abr. ibn Chisdai, but the copying of the chapter on the Jews did not appear worth while to the copyists of the MSS. still existing.

¹ ZDMG., XIII, 515; *Hebr. Bibliogr.*, II, 109; *Bibl. Mathem.*, 1895, p. 47. Ad. Schwarz, *Der jüd. Kalender*, Breslau, 1872, does not know the second edition of Slonimski's work on the Kalender (see *Monatsschr. f. Wiss. u. Gesch. d. Judenth.*, 1864).

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(To be continued.)